

Impact of E-Supply Chain Management on Customer Satisfaction Through Service Quality in Agricultural E-Commerce

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Abstract - The research aimed to assess the impact of applying e-supply chain management (E-SCM) on service quality (SQ) and customer satisfaction (CS) in agricultural e-commerce. It was motivated by challenges in Indonesia that led to food waste due to lengthy supply chain, particularly evident in the horticulture category, such as vegetables. The inefficiencies along the chain resulted in substantial annual losses, ranging from IDR 213 to 551 trillion, equivalent to 4% - 5% of Indonesian GDP. Using associative investigation with three variables and 446 samples selected through simple random sampling, the research aimed to evaluate and enhance E-SCM performance in supply chain. The effective application of E-SCM offered benefits, including time and cost efficiency, work flexibility, and other conveniences. Not only this did benefit the company but also enhanced service quality and customer satisfaction. SEM-PLS was used with a reflective method, and data processing was facilitated by SMART-PLS 4 software. The results show a significant influence of E-SCM application on service quality and customer satisfaction. Furthermore, service quality has a significant and direct impact on customer satisfaction. E-SCM influences customer satisfaction through both direct and indirect pathways, which are mediated by service quality variables.

Keywords: e-supply chain management, customer satisfaction, service quality, e-commerce

I. INTRODUCTION

Amidst the COVID-19 pandemic, there were profound changes in various aspects of life that necessitated adaptation, consequently resulting in the

rapid development of technology. This transformation extended to e-commerce, particularly in agricultural product delivery across diverse commercial sectors. Several agricultural e-commerce platforms in Indonesia include TaniHub, SayurBox, AlloFresh, HappyFresh, and Segari. However, the research focuses on evaluating the performance of SayurBox and Segari. Both e-commerce offers business-to-consumer (B2C) services, connecting farmers directly with end consumers. The allure of the agricultural sector is supported by the Indonesian climate and natural conditions, fostering the abundant production of goods. Moreover, the sector played a crucial role in supporting the economy during the COVID-19 pandemic, contributing 5.01% (year-over-year) in the first quarter of 2022, compared to the same period in 2021 (BPS, 2022). In 2021, the agricultural sector contributed 2.28% (year-over-year) to Indonesian GDP in the fourth quarter, driven by a 3.8% increase in the horticultural sub-sector, including vegetables and fruits ("BPS: Pertanian dan tiga sektor", 2022). Despite the positive aspects, the agricultural sector still has unresolved issues, specifically challenges in product distribution due to supply chain inefficiencies leading to food loss and waste. Food loss occurs during the food preparation process, while food waste results from distribution, service, and consumption (Bappenas, 2021). The predicament is most evident in the horticulture category, such as vegetables, causing annual losses ranging from IDR 213 to 551 trillion, equivalent to 4% - 5% of GDP. Additionally, the issue contributes to environmental concerns, specifically increased greenhouse gas emissions. According to Bappenas (2021), Indonesian food loss and waste could potentially lead to a total impact of 1.702.9 Mt CO₂ – ek, equivalent to 7.29% of the average greenhouse gas emissions over 20 years. To address the distribution

challenges, the role of technology, including the use of e-commerce, is essential. E-commerce enhances distribution efficiency, prolongs the shelf life of agricultural products, and benefits farmers by ensuring equitable distribution and fair prices (Mutiah, 2021). Irrespective of the type of e-commerce, Figure 1 presents the substantial growth in e-commerce transactions, reaching IDR 403 trillion in 2021, a substantial rise from IDR 266 trillion in 2020. With a significant growth rate of 31.4% from the previous year, these transactions are projected to reach IDR 530 trillion in 2022 (Rizaty, 2021).

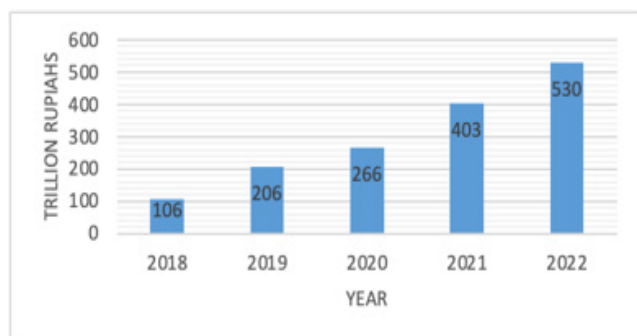


Figure 1 E-commerce Transactions in Indonesia (2018 – 2022)

Source: Bank of Indonesia

With the surge in transactions, there has been a simultaneous increase in public complaints related to consumer experiences with e-commerce. According to CNBC Indonesia, there were 9,393 e-commerce-related complaints spanning various industries, such as food and beverage, transportation services, refunds, mismatched orders, damaged products, undelivered orders, company-initiated order cancellations, discrepancies in product arrival times, instances of fraud, and malfunctioning social media platforms (Sandi, 2022). Furthermore, specific grievances from customers of SayurBox and Segari, as extracted from Google Play Store reviews, focus on issues, comprising product quality, order delivery delays compared to promised times, unresponsive and unfriendly customer service, erroneous order tracking services, and frequent order cancellations. These complaints are intricately tied to e-commerce order fulfillment process, a crucial aspect of supply chain management comprising all business operations from order receipt to customer delivery, inclusive of customer service (Turban et al., 2018). Common challenges faced by companies in the process include accurate order delivery, timeliness, order tracking, delivery speed, and shipping costs (Turban et al., 2018). Based on data indicating issues with SayurBox and Segari, the complaints were in line with challenges in order fulfillment, a crucial component integrated into supply chain management processes. It plays an important role in generating value to achieve customer satisfaction through the quality of products or services

provided in the supply chain. Executed with the aid of technology, the e-fulfillment process in e-commerce is synonymous with order fulfillment, suggesting the significance in supply chain. This indirectly shows the crucial role of supply chain in e-commerce, signifying potential issues with e-supply chain management (E-SCM) in agricultural e-commerce, specifically in the cases of SayurBox and Segari. The challenges result in customer dissatisfaction, indicating the critical need to evaluate E-SCM application to support customer satisfaction and identify the influencing factors in the modern supply chain, including service quality.

Previous reviews, such as the work by Abdirad and Krishnan (2022), have substantiated the positive impact of applying E-SCM on service quality and customer satisfaction. Additionally, Shamout and Elayan (2018) find a direct effect of E-SCM in creating customer satisfaction. According to Omoruyi (2016), Small and Medium-sized Enterprises (SMEs) using supply chain management as a strategic business component aim to increase customer satisfaction by enhancing the quality of the products and services. Le, Nguyen, and Truong (2020) further establish a significant relationship between customer satisfaction and service quality, suggesting that technological advancements enhanced service quality, subsequently contributing to customer satisfaction.

E-SCM includes the comprehensive management of supply chain process, spanning planning, forecasting, procurement, inventory, production, logistics, sales, and the acquisition of information and other resources. The holistic approach ensures customer satisfaction and high-quality service delivery through e-commerce or information technology (Abdirad & Krishnan, 2022). Four dimensions, including information quality, system quality, usage, and net benefit, can be used to evaluate the efficiency of E-SCM performance (Baroto, 2018). E-SCM not only enhances efficiency and effectiveness but also contributes to greater customer satisfaction by opening up business opportunities for market development (Tan & Trang, 2017).

Service quality pertains to how companies meet or exceed customer expectations, aiming to achieve satisfaction and foster a positive attitude toward the provided services (Pakurár, 2019; Gogoi, 2020). It is acknowledged that good service quality not only heightens customer satisfaction but also cultivates customer loyalty, contributing to increased market share and company profitability (Pakurár, 2019; Abdirad & Krishnan, 2022). The assessment of service quality often uses the SERVQUAL method, comprising reliability, responsiveness, assurance, empathy, and tangibility (Gogoi, 2020). It is found that supply chain management has a positive impact on improving service quality (Zand & Dehyouri, 2022).

Customer satisfaction is a psychological response arising from the disparities between people expectations and the experiences before and after using a product or service (Rachmawati & Agus, 2020). The measurement of customer satisfaction

covers five dimensions: 1) personal contact quality, 2) order discrepancy handling, 3) timeliness, 4) order condition, and 5) operational information sharing (Uvet, 2020).

II. METHODS

The research applies a quantitative method, objectively testing theories by examining numerical relationships between variables and analyzing them using statistical procedures. Specifically, the type of quantitative research applied is associative or causal, aiming to uncover causal relationships between variables (Sekaran & Bougie, 2016). The unit of analysis covers individuals or customers who have engaged in one or more transactions with agricultural e-commerce platforms such as SayurBox or Segari. The analysis strategy consists of a survey with a questionnaire instrument, enabling the collection of both quantitative and qualitative data through various question types. This method facilitates the exploration of variables across a large sample size and allows for a careful analysis of statistical results (Sekaran & Bougie, 2016). The time horizon adopted is cross-sectional, as data are gathered just once to address the research questions.

The research framework, shown in Figure 2, designates E-SCM as the independent variable, service quality being the intervening variable, and customer satisfaction representing the dependent variable. The framework is built on three main hypotheses:

H₁: E-SCM had a positive and direct effect on customer satisfaction

H₂: E-SCM had a positive and direct effect on service quality

H₃: Service quality had a positive and direct effect on customer satisfaction

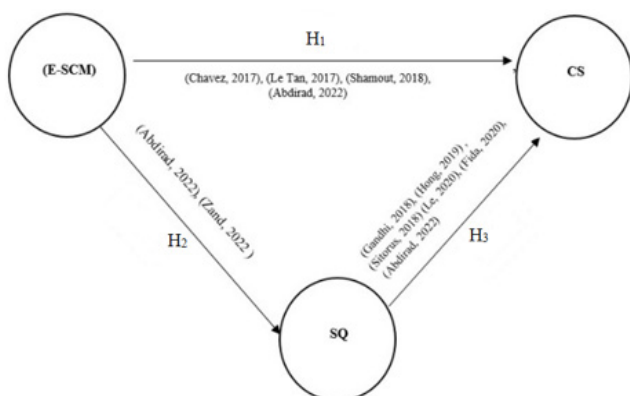


Figure 2 Research Framework

Data used in the research originates from a primary source, specifically collected through a questionnaire using the Likert Scale. The method is selected because it enabled the collection of

information from the unit of analysis, facilitating the description, comparison, or explanation of phenomena, knowledge, attitudes, and behaviors. The questionnaire is distributed online to individuals residing in Jabodetabek who have engaged in one or more transactions with agricultural e-commerce platform.

The analysis adopts a non-probability sampling method, specifically purposive sampling or judgment sampling. The method facilitates the collection of information or data from unique groups that are relevant to the research, particularly targeting user groups within agricultural e-commerce (Sekaran & Bougie, 2016). As the exact size of the population remains unknown, the Cochran formula is adopted to determine the minimum sample size required for the analysis.

$$N = \frac{z^2 (p-q)}{e^2} = \frac{1.96^2 ((0.5)(0.5))}{(0.05)^2} = 384.16 \approx 385$$

Note:

- N : number of samples
- z : level of confidence 95% or Z value = 1.96
- p : expected category proportions
- q : proportion of other categories
- e : margin error (5%) or alpha (0.05)

According to the formula calculations, a minimum of 385 samples is required but this investigation collects 446 samples. The selected analytical method is PLS-SEM, allowing for causal-predictive analysis using structural equation modeling (SEM), with an emphasis on explaining variance in the dependent variable model.

The data are processed using Smart-PLS, consisting of both the measurement model (outer model) and the structural model (inner model). In the research, variable operations adhered to indicators and questionnaire item numbering from several reference journals.

The analysis examines three variables, including E-SCM (X) as the independent variable, service quality (Y) being the intervening variable, and customer satisfaction (Z) representing the dependent variable. Operationalization details for the variables are presented in Table 1.

The measurement model comprises an internal consistency reliability test, a convergent validity test, and a discriminant validity test. Internal consistency reliability is assessed using composite reliability and Cronbach alpha values in the range of 0.70 – 0.95. Convergent validity evaluated the extent to which constructs converged to explain the variance of indicators, with outer loading values ranging from 0.4 to 0.708 and average variance extracted (AVE) values exceeding 0.50. Discriminant validity measured how a construct differed from other constructs in empirical standards, using the heterotrait – monotrait ratio (HTMT) with a value < 0.90.

Table 1 Operationalization of Research Variables

Variable	Definition	Dimension	Measurement Scale	Item
E-Supply Chain Management (E-SCM) (X)	E-SCM represented a tactical and strategic management philosophy related to the application of technology in conducting productive activities in supply chain. The purpose was to seek innovative solutions and adapt to the capabilities of supply chain channels with the aim of creating customer value (Chavez, 2017, in Farouk, "Reverse logistics solution in e-supply chain management by blockchain technology," 2020).	System quality Information quality Usage Net benefit	Ordinal	1-12
Service Quality (Y)	How companies could meet or exceed customer expectations to achieve satisfaction and develop a positive attitude toward services provided (Pakurár, 2019; Gogoi, 2020)	Reliability Assurance Responsiveness Tangibility Emphaty	Ordinal	13-27
Customer Satisfaction (Z)	Customer satisfaction represented a psychological response to the difference between perceptions of expectations and direct experience before and after using a product or service (Rachmawati & Agus, 2020)	Personal contact quality Order discrepancy handling Timeliness Order condition Operational information sharing	Ordinal	28-43

The structural model consists of collinearity assessment, structural model path coefficients test, coefficient of determination (R^2 value) test, and model predictive power test. Collinearity assessment adopts a variance inflation factor (VIF) value of < 5 . The structural model path coefficients test indicates the hypothesized relationships among constructs using path coefficient values between -1 and +1, with t-values > 1.96 . The coefficient of determination test assesses the model explanatory power, with R^2 values indicating substantial power (0.75), moderate explanatory power (0.50), and weak explanatory power (0.25). Model predictive power compares each root-mean-square error (RMSE) indicator value with the naïve linear regression model (LM) (Hair, Hult, Ringle, & Sarstedt, 2017). Since service quality serves as an intervening variable, it is crucial to examine the indirect effect by comparing significance values and terms of relevance from both the direct and indirect effect tests. There are three different categories of indirect effects: (1) complementary mediation, occurring when the values of indirect and direct effects are significant and pointed in the same direction; (2) competitive mediation, occurring when the indirect and direct effects are significant but have different directional values; and (3) indirect-only mediation, occurring when only the indirect value is significant.

III. RESULTS AND DISCUSSIONS

This research includes 446 individuals who use services of Sayurbox or Segari, and the selected cities

for samples are Jakarta, Bogor, Depok, Tangerang, and Bekasi. Demographic information, as presented in Table 2, includes percentages related to gender, age, place of residence, monthly income, amount spent on shopping, and frequency of intention to shop. A significant majority of samples, 76.46%, comprised females, indicating a gender distribution in the demographic. Approximately 91.67% of samples fell in the 20 to 30 age range, suggesting services popularity among young adults. Geographically, 52.63% of survey samples resides in Jakarta, indicating the prominence among samples. In terms of income, a substantial 69.73% of the cohort reported earning less than IDR 5,000,000 monthly. This income segment constitutes a significant proportion of the surveyed population. Examining shopping expenditure, 52.00% of samples spent between IDR 125,000 and IDR 250,000, signifying consistent purchasing behavior. Furthermore, all survey samples report shopping four to six times a week, indicating a high frequency of engagement with such services.

Table 2 Respondent Profile

Demographic	Categories	%
Gender	Male	23.54%
	Female	76.46%
Age	20-30	91.67%
	30-40	6.44%
	40-50	1.52%
	≥ 50	0.38%

Table 2 Respondent Profile (Continued)

Demographic	Categories	%
Domicile	Jakarta	52.63%
	Tangerang	17.98%
	Bekasi	10.09%
	Bogor	8.77%
	Depok	10.53%
Revenue	< IDR 5.000.000	69.73%
	> IDR 5.000.000-10.000.000	23.32%
	> IDR 10.000.000-15.000.000	4.26%
	> IDR 15.000.000-20.000.000	2.02%
	> IDR 20.000.000	0.67%
Shopping Expenditure	< IDR 125.000	18.80%
	IDR 125.000-250.000	52.00%
	IDR 250.000-375.000	20.20%
	IDR 375.000-500.000	7.80%
Shopping Intention	> IDR 500.000	1.10%
	< 1 time per week	0.00%
	1 - 3 times per week	0.00%
	4- 6 times per week	100.00%
	> 6 times per week	0.00%

Table 3 Internal Consistency Reliability Testing: Cronbach's Alpha

	Cronbach's Alpha	Minimum Value	Conclusion
CS	0.839	0.7	Reliable
E-SCM	0.804	0.7	Reliable
SQ	0.879	0.7	Reliable

Note: CS: Customer Satisfaction; E-SCM: E-Supply Chain Management; SQ: Service Quality

Table 4 Internal Consistency Reliability Testing: Composite Reliability

	Cronbach's Reliability		Minimum Value	Conclusion
	(rho_a)	(rho_c)		
CS	0.841	0.879	0.7	Reliable
E-SCM	0.805	0.859	0.7	Reliable
SQ	0.88	0.903	0.7	Reliable

The evaluation of the measurement model shows robust results across critical dimensions. Internal consistency reliability is evident in all three variables, including customer satisfaction, E-SCM, and service quality. This is indicated by individual Cronbach's Alpha values exceeding 0.7 (CS: 0.839, E-SCM: 0.804, SQ: 0.879) and composite reliability values surpassing 0.70 (CS: 0.879, E-SCM: 0.859,

SQ: 0.903), as detailed in Table 3 and Table 4. In terms of convergent validity, thorough testing of indicator loadings, and subsequent elimination of outer loadings nine times produce affirmative results. Table 5 shows all 22 indicators representing the three variables pass the validity test, with six, nine, and seven indicators for E-SCM, service quality, and customer satisfaction, respectively.

Table 5 Indicator Loading Test

	Outer loadings	Indicator Loadings	Conclusion
AS1 ← SQ	0.698	0.4 – 0.708	Valid
AS2 ← SQ	0.734	0.4 – 0.708	Valid
AS3 ← SQ	0.718	0.4 – 0.708	Valid
AS4 ← SQ	0.691	0.4 – 0.708	Valid
EMP2 ← SQ	0.727	0.4 – 0.708	Valid
EMP3 ← SQ	0.692	0.4 – 0.708	Valid
IQ1 ← E-SCM	0.695	0.4 – 0.708	Valid
NB1 ← E-SCM	0.743	0.4 – 0.708	Valid
NB2 ← E-SCM	0.681	0.4 – 0.708	Valid
ODH1 ← CS	0.754	0.4 – 0.708	Valid
ODH2 ← CS	0.684	0.4 – 0.708	Valid
ODH3 ← CS	0.701	0.4 – 0.708	Valid
OIS1 ← CS	0.705	0.4 – 0.708	Valid
OIS3 ← CS	0.707	0.4 – 0.708	Valid
RES3 ← SQ	0.716	0.4 – 0.708	Valid
SysQ1 ← E-SCM	0.706	0.4 – 0.708	Valid
SysQ2 ← E-SCM	0.715	0.4 – 0.708	Valid
TANG1 ← SQ	0.73	0.4 – 0.708	Valid
TANG3 ← SQ	0.706	0.4 – 0.708	Valid
TI2 ← CS	0.697	0.4 – 0.708	Valid
TI3 ← CS	0.743	0.4 – 0.708	Valid
U3 ← E-SCM	0.719	0.4 – 0.708	Valid

Note:

- AS : Assurance
- EMP : Empathy
- IQ : Information quality
- NB : Net benefit
- ODH : Order discrepancy handling
- OIS : Operational information sharing
- RES : Responsiveness
- SysQ : System quality
- TANG : Tangibility
- TI : Timeliness
- U : Usage

Average variance extracted (AVE) values, presented in Table 6, points out substantial variation in the measurement items for customer satisfaction (0.509), E-SCM (0.504), and service quality (0.508), suggesting good convergent validity for all variables. Lastly, the evaluation of discriminant validity, guided

by HTMT criterion (Avkiran & Ringle, 2018), shows compliance, as all HTMT values between variable relationships fell below the specified threshold of 0.90, reinforcing the confirmation of validity for all variables (Table 7).

Table 6 Convergent Validity Test: Average Variance Extracted (AVE) Value

	AVE	Minimum Value	Conclusion
CS	0.509	0.5	Valid
E-SCM	0.504	0.5	Valid
SQ	0.508	0.5	Valid

Table 7 Discriminant Validity Testing: HTMT

	HTMT	Cut Off Value	Conclusion
E-SCM ↔ CS	0.743	<0.90	Valid
SQ ↔ CS	0.896	<0.90	Valid
SQ ↔ E-SCM	0.855	<0.90	Valid

The structural model analysis is subjected to a thorough examination, including collinearity scrutiny, path coefficient testing, determination of coefficients (R^2 values), and an assessment of predictive power. In the collinearity assessment, as presented in Table 8, all construct variables have VIF values below 5, signifying the absence of significant collinearity issues among the predictors. Specifically, VIF values of 2.101, 1, and 2.101 explain the relationships between E-SCM and customer satisfaction, E-SCM and service quality, and service quality and customer satisfaction, reinforcing the determination of no collinearity.

Table 8 Collinearity Assessment

	Inner VIF	Cut Off Value	Conclusion
E-SCM ↔ CS	2.101	<5	There is no collinearity
E-SCM ↔ SQ	1	<5	There is no collinearity
SQ ↔ CS	2.101	<5	There is no collinearity

In the structural model path coefficients test (Table 9), the hypothesis testing results, using t-statistic, show values exceeding 1.96 with associated p-values below 0.05. The results confirm the positive, direct, and significant effects of each hypothesis, supported by previous reviews mentioned in the table. The R^2 values are explored in Table 10, indicating substantial

explanatory power as all the values exceeded 0.5. According to the criteria proposed by Hair, et al. (2017), the model shows moderate to substantial explanatory power for the endogenous constructs, comprising customer satisfaction and service quality.

The model predictive power is evaluated by comparing RMSE indicators with a naïve linear regression model (LM) in Table 11. The majority of indicators have lower RMSE values in PLS-SEM analysis compared to the naïve LM_RMSE value, suggesting that the research model possesses a medium level of predictive power. This comprehensive analysis provided a robust understanding of the structural model performance, indicating the validity and predictive capabilities in explaining the relationships among the variables under examination.

Table 9 Hypothesis Test on Significance and Relevance Test

	Path Coef.	T-Stat.	P-Values	Conclusion
H₁:				
E-SCM → CS	0.122	2.404	0.016	Accepted
H₂:				
E-SCM → SQ	0.724	19.353	0.000	Accepted
H₃:				
SQ → CS	0.685	15.012	0.000	Accepted

Table 10 Coefficient of Determination test

	R-Square	Conclusion
CS	0.604	Moderate to substantial
SQ	0.524	Moderate to substantial

Table 11 MV Prediction Summary

	Q ² predict	PLS-SEM_RMSE	LM_RMSE
ODH1	0.183	0.562	0.564
ODH2	0.104	0.601	0.608
ODH3	0.181	0.548	0.552
OIS1	0.177	0.574	0.579
OIS3	0.204	0.566	0.575
TI2	0.219	0.565	0.565
TI3	0.238	0.659	0.658
AS1	0.268	0.54	0.544
AS2	0.315	0.497	0.504
AS3	0.251	0.561	0.558
AS4	0.252	0.523	0.529
EMP2	0.217	0.652	0.653

Table 11 MV Prediction Summary (Continued)

	Q ² predict	PLS-SEM_ RMSE	LM_RMSE
EMP3	0.206	0.566	0.572
RES3	0.256	0.529	0.53
TANG1	0.324	0.511	0.518
TANG3	0.249	0.526	0.536

Note:

- ODH : Order discrepancy handling
- OIS : Operational information sharing
- TI : Timeliness
- AS : Assurance
- EMP : Empathy
- RES : Responsiveness
- TANG : Tangibility

Table 12 presents a positive impact of E-SCM on customer satisfaction through the mediation of service quality. The effect size is measured at 0.496, with a substantial t-value of 11.489, exceeding the critical threshold of 1.96. The associated p-value is impressively low at 0.000, confirming the statistical significance of this mediation effect. Table 13 further provides a direct effect of E-SCM on customer satisfaction, recording a coefficient of 0.122 with a significant t-value of 2.404 and p-value of 0.016. Based on the criteria established by Hair, et al. (2017), the results suggest a scenario of complementary or partial mediation.

Considering the overarching test results, several implications surface. Agricultural e-commerce entities could enhance customer satisfaction by integrating E-SCM strategies, particularly by focusing on system

and information quality, user-friendly interfaces, and customer benefits. Improvements in communication, reduction of order damages during distribution, and attention to timely delivery and product tracking are also identified as key areas for optimization. The research, using three variables and 43 indicators, is subjected to a thorough process of repeated outer loadings tests and eliminations, resulting in a final set of 22 indicators representing the three variables. Figure 3 provides the conclusive path diagram model after nine rounds of testing, including six, nine, and seven indicators for E-SCM, service quality, and customer satisfaction, respectively. The comprehensive analysis provides valuable insights for businesses seeking to enhance customer satisfaction through effective E-SCM integration and improvements in associated service quality dimensions.

Table 12 Path Coefficient – Specific Indirect Effect

	Path Coefficient (specific indirect effect)	T-Statistics	P-Values
E-SCM → SQ → CS	0.496	11.489	0.000

Table 13 Path Coefficient - Direct Effect

	Path Coefficient (direct effect)	T-Statistics	P-Values
E-SCM → CS	0.122	2.404	0.016

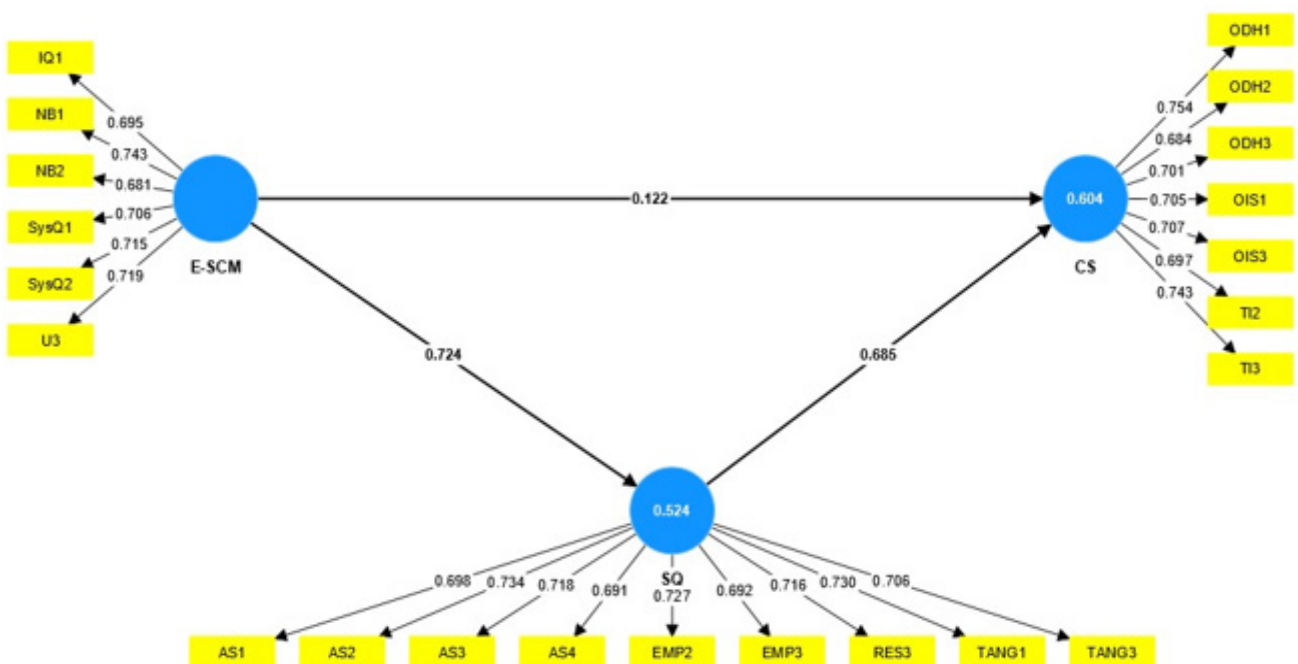


Figure 3 Path Diagram

IV. CONCLUSIONS

E-SCM has direct and indirect effects on customer satisfaction. Additionally, E-SCM has a positive and direct impact on service quality. Service quality shows both significant and direct effects on customer satisfaction and serves as a mediator in the indirect effect between E-SCM and customer satisfaction. The dimensions of information quality, system quality, usage, and net benefits are crucial for evaluating the success of E-SCM application, contributing to enhanced customer satisfaction and superior service quality. The proficiency with which agricultural e-commerce platforms delivered E-SCM correlated with higher levels of customer satisfaction and service quality. The research attests to the commendable performance of agricultural e-commerce, supported by the analysis results and positive respondent feedback. Despite the positive performance, agricultural e-commerce management needs to prioritize the condition of ordered products and the quality of customer service. Attention to the timeliness of product delivery and real-time product availability information is necessary. For potential investors interested in agricultural e-commerce, considering the company performance, growth potential, and financial health is recommended. Specifically, investments in studied platforms, including SayurBox and Segari are promoted. As for future investigations, a more in-depth exploration of other dimensions in service quality and customer satisfaction variables associated with E-SCM integration in e-commerce is suggested. Moreover, providing more specific descriptions of each agricultural e-commerce in subsequent research would be beneficial.

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Data Availability Statement: The participants of this research did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

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